REMARKS

This communication responds to the Office Action mailed on August 10, 2005. Claims 20, 22, 24, 26, 28, 32, 34, and 37 are amended, no claims are canceled, and no claims are added. As a result, claims 20, 22, 24, 26, 28, 32, 34, and 37 are now pending in this Application.

Interview Summary

The Applicant thanks Examiner Jin-Cheng Wang for the courtesy of a telephone interview on July 27, 2005 with the Applicant's representative, Mark V. Muller, and the inventor, Mr. John D. Miller. A summary of the interview is given as follows.

The Office has taken the position that a viewing surface normal vector may form an "angle of incidence" with "an object surface," as these phrases are used in claim 22, even if the intersection between the viewing surface normal vector and the object occurs only at a vertex. For example, at the intersection between a vertex "e" and the viewing surface normal vector "Nz" shown in FIG. 5 of U.S. Patent Number 5,880,735 (hereinafter "Shinohara").

As a matter of contrast, the Applicant contends that no angle of incidence with an "object surface" can be formed when a viewing surface normal vector intersects a vertex, because a vertex is not a surface, it is a point; there is nothing present at the vertex (e.g., a plane) to form a well-defined incident angle with any vector that intersects it. That is, forming the angle in the manner suggested by the Office leads to an ambiguous result, since an infinite number of lines and planes intersect with the vertex, and any one of them could be used to form an angle of incidence with the viewing surface normal vector. However, in the interest of expedience, claims 20, 22, 24, 26, 28, 32, 34, and 37 have been amended to make it clear that a planar object surface defines the angle of incidence with the viewing surface normal vector, and not for reasons related to patentability. Claim 20 has also been amended to correct a typographical error, and not for reasons related to patentability. For example, the incidence angle between a viewing surface normal vector and the planar surface of an object can be seen in FIG. 1 of the Application: referencing angle 380, vector 370, and cube faces 385, 390. Thus, no new matter has been added.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
Serial Number: 09/210,055
Filing Date: December 11, 1998
Title: METHOD AND APPARATUS FOR CONTROLLING IMAGE TRANSPARENCY
Assignee: Intel Corporation

Page 6
Dkt: 884.055US1 (INTEL)

§102 Rejection of the Claims

Claims 22, 24, 26, 28, 32, 34 and 37 were rejected under 35 USC § 102(e) as being anticipated by Shinohara. First, the Applicant does not admit that Shinohara is prior art, and reserves the right to swear behind this reference in the future. Second, since the Office has not demonstrated a *prima facie* case of anticipation, the Applicant respectfully traverses this rejection under § 102(e).

Anticipation under 35 USC § 102 requires the disclosure in a single prior art reference of each element of the claim under consideration. *See Verdegaal Bros. V. Union Oil Co. of California,* 814 F.2d 628, 631, 2 USPQ 2d 1051, 1053 (Fed. Cir. 1987). It is not enough, however, that the prior art reference discloses all the claimed elements in isolation. Rather, "[a]nticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.,* 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.,* 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)) (emphasis added). "The *identical invention* must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.,* 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP § 2131 (emphasis added).

Shinohara teaches a method and apparatus for transparency conversion by changing the transparency of polygons based upon the Z component of the unit normal vector at each vertex. *See* Shinohara, Col. 11, lines 37-43. "The normal vector of each vertex is found by taking the average of each normal vector of the polygons adjoining the vertex." Shinohara, Col. 2, lines 2-4. The transparency of each pixel on a particular polygonal surface is then adjusted to reflect the transparency of the vertices which enclose the surface. *See* Shinohara, Col. 10, lines 33-49.

Thus, Shinohara explicitly states that transparency changes are made using vertex normal vectors, and not vectors at incident angles created by the intersection of viewing surface normal vectors with a planar surface, as claimed by the Applicant. Since Shinohara does not teach adjusting image transparency using the angle of incidence between the viewing surface normal vector and the planar surface of an object, claims 22, 24, 26, 28, 32, 34 and 37 should be in condition for allowance. Reconsideration and withdrawal of the rejection under 35 U.S.C. § 102 is respectfully requested.

§103 Rejection of the Claims

Claim 20 was rejected under 35 USC § 103(a) as being unpatentable over Obata (U.S. 5,222,203; hereinafter "Obata") in view of Shinohara. The Applicant does not admit that Obata is prior art, and reserves the right to swear behind this reference in the future. And, since a *prima facie* case of obviousness has not been established as required by M.P.E.P. § 2142, the Applicant respectfully traverses this rejection.

The Examiner has the burden under 35 U.S.C. § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d (BNA) 1596, 1598 (Fed. Cir. 1988). The M.P.E.P. contains explicit direction to the Examiner in accordance with the *In re Fine* court:

> In order for the Examiner to establish a *prima facie* case of obviousness, three base criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *M.P.E.P.* § 2142 (citing *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d (BNA) 1438 (Fed. Cir. 1991)).

The requirement of a suggestion or motivation to combine references in a *prima facie* case of obviousness is emphasized in the Federal Circuit opinion, *In re Sang Su Lee*, 277 F.3d 1338; 61 U.S.P.Q.2D 1430 (Fed. Cir. 2002), which indicates that the motivation must be supported by evidence in the record.

No proper *prima facie* case of obviousness has been established because none of the required elements has been demonstrated, because either: (1) the combination of references does not teach all of the limitations set forth in the claims; (2) there is no motivation to combine the references; or (3) the modifications suggested by the Office provide no reasonable expectation of success. Each of these points will be explained in detail, as follows.

The Combination of References Does not Teach All Limitations: As admitted in the Office Action, "Obata does not explicitly disclose that the viewpoint vector to be exactly the same as the light source vector". The Office goes on to state that "Obata at least suggests the viewpoint vector to be exactly the same as the light source vector by stating that the viewpoint

and the light source are determined to be on the same side of the translucent surface wherein Fig.

2 discloses that the viewpoint vector and the light source vector are in the opposite side of the

object surface".

This latter assertion stretches what is revealed by Obata beyond that which is credible.

Obata explicitly discusses a viewpoint vector VE that is separate and apart from a light source

vector VL. *See* Obata, FIG. 2 and Col. 7, lines 33-37. This being the case, it does not make any

sense to substitute the light source vector VL for the viewpoint vector, as suggested by the

Office. Therefore, as noted in the Office Action, it is true that "Obata does not explicitly

disclose that the viewpoint vector to be exactly the same as the light source vector".

In addition, as admitted in the Office Action, "Obata does not specifically teach the claim

limitation of 'assigning a transparency factor to alpha'". Neither does Shinohara. As noted in

detail above, Shinohara explicitly states that transparency changes are made using vertex normal

vectors, and not incident angles created by the intersection of viewing surface normal vectors

with planar surfaces, as claimed by the Applicant. Thus, no combination of Obata and Shinohara

can supply the missing element of "assigning a transparency factor to alpha" because there is no

angle "alpha" disclosed by either Obata or Shinohara.

No Reasonable Expectation of Success: As the Office Action acknowledges, Obata does

not teach the claim limitation of "assigning a transparency factor to alpha." It is clear from a

careful reading of Obata that the color mixing taught therein does not provide a transparency

factor depending on the angle of incidence claimed by the Applicant, but is rather a characteristic

of the material forming the object to be displayed:

> The diffused transmitted light component may be calculated based upon a coefficient
> which is a function of the characteristics of the material forming the translucent
> object, the intensity of incident light from the light source and the angle of incidence
> of the incident light for illuminating the translucent object. The characteristics of the
> material include its transmissivity and its transparency." Obata col. 2, lines 25-33.

Any transparency factor disclosed by Shinohara would have to be fixed according to a

vector that is normal to a vertex, and not to a planar surface, as claimed by the Applicant.

Therefore, using Shinohara to provide a transparency factor to Obata would not lead one of

ordinary skill in the art to expect success. That is, the transparency factor provided by Shinohara

would be totally unpredictable, since the incidence angle between a vertex and a vector normal to the viewing surface is ambiguous.

It is respectfully noted that the test for obviousness under § 103 must take into consideration the invention as a whole; that is, one must consider the particular problem solved by the combination of elements that define the invention. *See Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143, 227 U.S.P.Q. 543, 551 (Fed. Cir. 1985) (emphasis added). References must be considered in their entirety, including parts that teach away from the claims. See MPEP § 2141.02.

In summary, the references neither teach nor suggest the element of assigning a transparency factor to alpha, as claimed by the Applicant, and the modifications suggested by the Office do not lead to a reasonable expectation of success. In fact, the references teach away from such a combination, as the transparency factor provided by Shinohara is ambiguous. Thus, the requirements of *M.P.E.P.* § 2142 have not been satisfied; and a *prima facie* case of obviousness has not been established with respect to the Applicant's claims. It is therefore respectfully requested that the rejection of claim 20 under 35 U.S.C. § 103 be reconsidered and withdrawn.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
Serial Number: 09/210,055
Filing Date: December 11, 1998
Title: METHOD AND APPARATUS FOR CONTROLLING IMAGE TRANSPARENCY
Assignee: Intel Corporation

Page 10
Dkt: 884.055US1 (INTEL)

OCT 1 3 2005

CONCLUSION

The Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone the Applicant's attorney Mark Muller 210-308-5677, or the below-signed attorney at (612) 349-9592, to facilitate prosecution of this Application. If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

JOHN D. MILLER

By his Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
Attorneys for Intel Corporation
P.O. Box 2938
Minneapolis, Minnesota 55402
(612) 349-9592

Date Oct. 10, 2005

By _____
Ann M. McCrackin
Reg. No. 42,858

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: MS Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this _11th_ day of October 2005.

Name

Signature